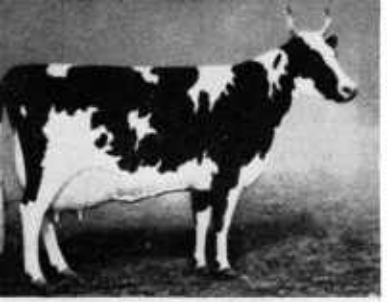

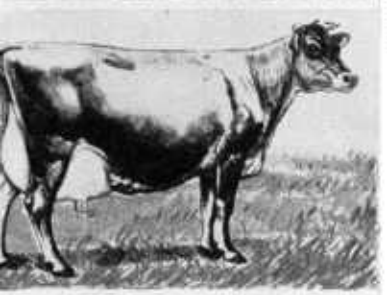

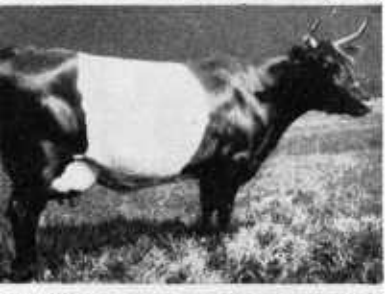

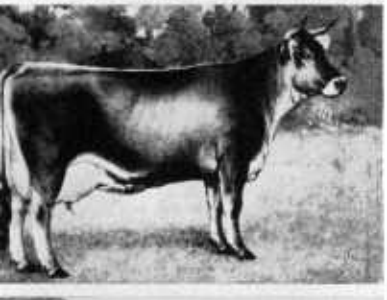

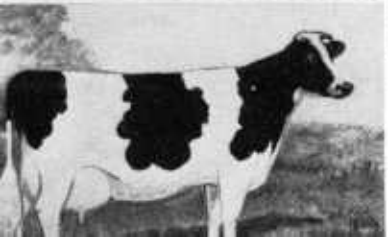

Dairy Cattle Breeds

FARMERS' BULLETIN NO. 1443

U.S. DEPARTMENT OF AGRICULTURE

SEVERAL BREEDS of cattle in the United States are recognized as dairy breeds. Although much alike in what is known as general dairy conformation, these breeds differ to some extent in certain characteristics. What these characteristics are, the factors to consider in selecting a breed, and the history of the origin and development of the breeds are questions of interest to both the beginner and the established breeder of dairy cattle. These are the topics discussed in this bulletin.

This bulletin supersedes Farmers Bulletin 893, Breeds of Dairy Cattle.

Washington, D. C.

Issued February 1925
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DAIRY CATTLE BREEDS

By AMER B. NYSTROM, *senior dairy husbandman, Administrative Division, Bureau of Dairy Industry*

Contents

DAIRY CATTLE IN THE UNITED STATES

ACCORDING to estimates made by the United States Department of Agriculture, about 38,000,000 cattle of all ages were being kept for dairy purposes in the United States on January 1, 1941. About two-thirds of these, or approximately 25,500,000, were cattle of six dairy breeds, namely: Ayrshire, Brown Swiss, Dutch Belted, Guernsey, Holstein-Friesian, and Jersey. Of the other one-third, about 8,400,000, or 22 percent, were cattle of dual-purpose and beef breeds used for milk production, and about 4,100,000, or 11 percent, were cattle of no particular breed.

Of the 25,500,000 cattle of the dairy breeds, about 4.7 percent, or 1,202,000, are registered. Much of the improvement in our dairy cattle will continue to come from increasing the number of good registered animals and through the use of good registered bulls in grade dairy herds. The development of good grade dairy herds from cows of no particular breed can be accomplished in a few generations by the use of good registered dairy bulls. For these reasons, registered dairy cattle have played in the past and will play in the future a very important role in the dairy industry of the Nation.

NUMBER AND DISTRIBUTION OF BREEDS

Table 1 shows the estimated total number of grades and registered dairy cattle of each dairy breed in the United States and different parts of the country on January 1, 1932. The relative percentages of each breed in the different sections are based on information obtained from the Bureau of Agricultural Economics from an inquiry sent to over 21,000 crop correspondents in February 1932. Grades were listed with the breeds to which they seemed to belong. The number of cattle of each breed on January 1, 1932, was determined from the total cattle kept for dairy purposes in each section and the relative numbers that were of these breeds in the herds of crop correspondents. There were about 23,700,000 dairy cattle in the United States (including possibly 650,000 dairy bulls in use) at that time.

TABLE 1.—*Approximate number and distribution of cattle of dairy breeds, including registered and grades, by sections, in the United States, Jan. 1, 1932*

Breed	Cattle of dairy breeds	Relative distribution of breeds						
		United States	North Atlantic States	North Central States, west	North Central States, east	South Atlantic States	South Central States	Western States
	Number	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Ayrshire	317,000	1.4	4.0	0.6	1.4	0.4	0.3	1.0
Brown Swiss	248,000	1.0	.8	2.0	1.3	.3	.4	.5
Guernsey	3,709,000	15.7	21.6	20.6	13.5	19.6	2.4	17.5
Holstein	9,465,000	39.9	56.5	46.7	53.7	12.7	9.2	47.0
Jersey	9,961,000	42.0	17.1	30.1	30.1	67.0	87.7	33.8
Total	23,700,000	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Between 1932 and 1941 the number of cattle of the major dairy breeds increased some 6 or 7 percent. The exact distribution of this increase between the individual breeds is not known, but the percentage distribution is probably not very different from that in 1932.

Dutch Belted cattle, though comparatively few in number, are widely distributed in the United States.

Of the large numbers of cattle of dual-purpose breeds kept for milk, cattle of the Shorthorn breed are the most numerous, and are widely distributed in all States. Those breeds most commonly used for milk are indicated in table 4.

Table 2 shows the number of registered cattle of the dairy breeds on January 1, 1930, as enumerated by the census, by sections and by States. Similar data are not obtainable from the 1940 census.[1]

TABLE 2.—*Purebred (registered) cattle of the dairy breeds on farms in 1930, by States and sections, as shown by the census*

Division and State	Total	Ayrshire	Brown Swiss	Guernsey	Holstein-Friesian	Jersey	All other breeds [1]
United States	1,280,161	48,236	25,734	200,721	649,739	354,939	792
Geographic divisions:							
New England	87,889	12,256	467	19,397	32,567	23,089	113
Middle Atlantic	281,054	20,584	2,177	46,916	180,095	31,220	62
East North Central	401,332	5,295	13,947	66,368	233,768	81,804	150
West North Central	211,884	5,106	7,984	30,046	123,610	44,869	269
South Atlantic	72,467	1,536	206	20,577	21,200	28,885	63
East South Central	57,704	166	22	1,441	4,446	51,628	1
West South Central	66,877	316	102	1,755	7,171	57,458	75
Mountain	36,489	1,007	229	4,030	21,878	9,328	17
Pacific	64,465	1,970	600	10,191	25,004	26,658	42
New England:							
Maine	16,021	1,096	89	4,003	4,613	6,134	86
New Hampshire	11,179	2,115	55	2,555	5,153	1,301	
Vermont	25,716	4,065	145	3,468	7,986	10,045	7
Massachusetts	19,552	2,753	105	5,491	8,187	3,013	3
Rhode Island	3,182	429	13	796	1,555	388	1
Connecticut	12,239	1,798	60	3,084	5,073	2,208	16
Middle Atlantic:							
New York	155,626	14,881	1,230	19,390	106,311	13,799	15
New Jersey	17,075	316	164	3,925	10,232	2,397	41
Pennsylvania	108,353	5,387	783	23,601	63,552	15,024	6
East North Central:							
Ohio	82,102	1,441	940	12,440	35,027	32,253	1
Indiana	35,751	535	553	6,429	12,103	16,094	37
Illinois	59,615	625	4,474	5,241	29,060	10,179	36
Michigan	71,750	777	1,547	11,736	41,786	15,844	60
Wisconsin	152,114	1,917	6,433	30,522	105,792	7,434	16

See footnote at end of table.

[1] See table 6 for approximate number of animals registered each year by breeds.

TABLE 2.—*Purebred (registered) cattle of the dairy breeds on farms in 1930, by States and sections, as shown by the census*—Continued

Division and State	Total	Ayrshire	Brown Swiss	Guernsey	Holstein-Friesian	Jersey	All other breeds [1]
West North Central:							
Minnesota	78,650	1,066	3,176	15,147	54,072	5,141	48
Iowa	43,702	733	3,414	6,569	26,211	6,711	64
Missouri	31,548	160	144	2,289	7,875	21,030	50
North Dakota	9,354	118	339	1,454	6,950	493	----
South Dakota	9,141	312	488	1,203	6,516	595	27
Nebraska	11,933	420	146	1,240	7,865	2,250	12
Kansas	27,556	2,297	277	2,144	14,121	8,649	68
South Atlantic:							
Delaware	2,896	86	----	877	1,545	388	----
Maryland	19,294	661	57	6,093	9,553	2,885	45
District of Columbia	234	----	----	1	231	2	----
Virginia	14,150	82	35	5,288	5,756	2,989	----
West Virginia	6,863	293	107	1,112	1,668	3,682	1
North Carolina	11,788	362	1	3,393	978	7,054	----
South Carolina	5,969	----	----	2,430	763	2,776	----
Georgia	8,432	2	3	947	388	7,092	----
Florida	2,841	50	3	436	318	2,017	17
East South Central:							
Kentucky	16,903	32	20	616	2,953	13,281	1
Tennessee	18,869	34	2	210	894	17,729	----
Alabama	6,764	23	----	212	143	6,386	----
Mississippi	15,168	77	----	403	456	14,232	----
West South Central:							
Arkansas	6,532	5	5	264	514	5,737	7
Louisiana	4,234	1	----	123	431	3,679	----
Oklahoma	16,130	233	92	867	3,770	11,167	1
Texas	39,981	77	5	501	2,456	36,875	67
Mountain:							
Montana	4,551	111	125	653	3,167	495	----
Idaho	9,557	194	27	1,577	4,842	2,917	----
Wyoming	1,596	1	11	194	1,127	262	1
Colorado	8,155	403	42	764	5,669	1,277	----
New Mexico	1,322	13	----	54	463	777	15
Arizona	3,427	166	15	276	1,956	1,014	----
Utah	6,848	35	----	485	3,901	2,427	----
Nevada	1,033	84	9	27	753	159	1
Pacific:							
Washington	19,597	691	140	3,960	8,125	6,681	----
Oregon	21,755	328	261	3,190	3,577	14,360	39
California	23,113	951	199	3,041	13,302	5,617	3

[1] Including animals reported as registered, but with breed not specified.

Table 3 gives the average production of milk and butterfat of the cows having official yearly records in the breed associations.

TABLE 3.—*Average yearly production of milk and butterfat of the cows of different breeds that had official yearly records to Jan. 1, 1941*

Breeds	Advanced register or register of merit				Herd-improvement register			
	Records of cows and heifers	Milk	Butterfat		Records of cows and heifers	Milk	Butterfat	
			Quantity	Test			Quantity	Test
	Number	*Pounds*	*Pounds*	*Percent*	*Number*	*Pounds*	*Pounds*	*Percent*
Ayrshire	7,129	10,469	416	4.0	30,593	8,488	343	4.0
Brown Swiss	1,195	13,669	552	4.0	[1] 984	8,577	353	4.1
Guernsey	64,976	10,105	502	5.0	11,887	8,591	423	4.9
Holstein-Friesian	45,445	16,737	574	3.4	[2] 83,715	11,208	385	3.4
Jersey	[3] 63,044	8,584	460	5.4	[4] 43,978	6,919	366	5.3

[1] Up to Jan. 1, 1938.
[2] Up to Oct. 1, 1940.
[3] Includes 31,628 305-day records.
[4] Up to Jan. 1, 1940.

Table 4 shows the breeds of milk cows in different sections of the United States and in herds of various sizes. The relative numbers in each of the different-sized herds are calculated according to the distribution shown for 1932, when an inventory was taken on February 1 of the herds of 21,554 crop correspondents scattered throughout the United States, to show the approximate distribution of cows kept for dairy purposes by breeds, at that time. The relative number of cows kept for dairy purposes, both grade and registered, combined, is expressed as a percentage for each of the breeds, in each group of States and in each of the different-sized herds.

TABLE 4.—*Breeds of cows kept for dairy purposes in different parts of the United States and in herds of various sizes, Jan. 1, 1932* [1]

Region and size of herd	Cows kept for dairy purposes [2]	Distribution, by breeds						
		Holstein	Jersey	Guernsey	Ayrshire and Brown Swiss	Shorthorn and Red Polled	Hereford, Aberdeen Angus, and others	Mixed breeding
Region:	*Number*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
North Atlantic	3,213,000	51.1	15.5	19.5	4.3	2.6	0.4	6.6
East North Central	5,880,000	36.0	23.2	15.9	2.0	12.7	1.9	8.3
West North Central	7,028,000	23.9	13.4	6.0	1.2	36.2	7.8	11.5
South Atlantic	1,825,000	8.9	47.1	13.8	.5	6.1	4.7	18.9
South Central	4,741,000	6.3	60.0	1.7	.5	9.3	4.2	18.0
Western	2,209,000	35.5	24.2	12.7	1.1	16.2	3.4	8.9
United States	24,896,000	26.8	28.2	10.5	1.6	17.2	4.2	11.6
Number of milk cows per farm:								
1	1,454,000	8.4	60.0	7.0	1.1	5.5	1.7	16.3
2 or 3	3,399,000	11.5	48.8	7.7	.9	12.2	3.8	17.1
4 or 5	3,346,000	16.4	34.0	9.1	1.1	19.0	4.0	15.4
6 to 10	6,969,000	24.4	22.8	9.8	1.5	23.6	4.9	12.8
11 to 20	6,413,000	37.3	16.8	12.4	2.1	19.3	4.1	8.0
21 to 30	1,873,000	46.8	20.3	13.1	2.2	9.8	3.5	4.3
31 to 50	864,000	46.8	25.3	12.9	2.6	4.7	1.9	5.8
Over 50	578,000	39.8	26.8	17.2	2.6	6.6	2.2	5.0
Total	24,896,000	26.8	28.2	10.5	1.7	17.2	4.1	11.6

[1] Prepared by John B. Shepard, Agricultural Marketing Service.
[2] Estimated number of cows and heifers 2 years old and over kept for milk Jan. 1, 1932.

The data for breed distribution of cows kept for dairy purposes, shown in table 4, are based on conditions some years ago, but little new information on this subject has become available since that time. While some changes have been apparent in local areas, it is believed that the figures shown for various regions and sizes of herds are reasonably representative of conditions in January 1941.

The numbers of cows kept for dairy purposes at present in each of the various regions are somewhat different from those shown in table 4. Between 1932 and 1941 the number of cows kept for dairy purposes in the United States increased about a million head. The West North Central group of States, where droughts of 1934 and 1936 caused heavy liquidation of dairy herds, was the only region which had fewer cows kept for dairy purposes in 1941 than in 1932. The largest increases were evident in the East North Central and South Central regions of States, in each of which the increase was nearly 400 thousand head. The numbers of cows kept for dairy purposes in each region in recent years are shown in table 5.

TABLE 5.—*Number of cows kept for dairy purposes, Jan. 1, 1935–41*

Region	Number of cows and heifers 2 years old and over kept for milk, Jan. 1 [1]						
	1935	1936	1937	1938	1939	1940	1941
North Atlantic	3, 173, 000	3, 175, 000	3, 212, 000	3, 233, 000	3, 283, 000	3, 325, 000	3, 379, 000
East North Central	6, 151, 000	6, 027, 000	5, 994, 000	5, 976, 000	6, 045, 000	6, 138, 000	6, 278, 000
West North Central	7, 214, 000	6, 982, 000	6, 675, 000	6, 550, 000	6, 559, 000	6, 670, 000	6, 840, 000
South Atlantic	2, 008, 000	1, 979, 000	1, 945, 000	1, 920, 000	1, 965, 000	1, 983, 000	2, 008, 000
South Central	5, 264, 000	5, 086, 000	4, 982, 000	5, 005, 000	5, 052, 000	5, 069, 000	5, 140, 000
Western	2, 259, 000	2, 190, 000	2, 185, 000	2, 150, 000	2, 184, 000	2, 212, 000	2, 272, 000
Total, United States	26, 069, 000	25, 439, 000	24, 993, 000	24, 834, 000	25, 088, 000	25, 397, 000	25, 917, 000

[1] Agricultural Marketing Service, U. S. Department of Agriculture.

WHAT IS A DAIRY BREED?

The term "dairy breed" has been accepted by stockmen and investigators as referring to the breeds of cattle that are especially well fitted for the production of milk and butterfat. Such breeds represent the efforts made by breeders of many generations toward improving the milking capacity of certain classes of cows. Because of this fact the inherent tendency of registered dairy cows to produce milk is greater than that of a native or unimproved cow. This inherent capacity is transmitted to the offspring. As a result, the mating of a registered dairy animal with a native or scrub produces a grade animal which is superior to the scrub in production and in other dairy characteristics.

A registered dairy animal is one that has met the requirements for registration laid down by the association for that breed in the United States. A grade is the offspring resulting from mating a registered animal with a scrub, or from mating animals not registered but having near ancestors that are registered. The offspring of a registered animal and a grade is also a grade, and through progressive use of registered bulls such animals become high grade. The names of the breeds (Ayrshire, Brown Swiss, etc.) may refer to either registered or grade animals; but to prevent misunderstanding it is desirable to precede the breed name with the word "registered" or "grade."

In addition to the breeds of dairy cattle mentioned, cows of other breeds, including both the beef and dual-purpose, are kept for dairy purposes. These are discussed in Farmers' Bulletin 1779, Beef-Cattle Breeds for Beef and for Beef and Milk.

REGISTRATION

To be eligible for registration a dairy animal must be from a sire and dam which are recorded by name and number in a register of the breed, commonly called the herdbook. The animal must also meet certain color qualifications and other requirements for registration which are laid down by the various breed organizations. Copies of these rules may be obtained by writing to the associations concerned, as listed on page 34. The number of dairy cattle registered in the United States each year, 1926–1940, by breeds, is shown in table 6.

In addition to the herd register there is for each breed another register in which are entered the names of registered cows that have

completed records meeting specified requirements of milk and butterfat production under definite regulations. Bulls that have a certain number of tested daughters are also recorded in this register. This record of tested cows and of bulls with tested daughters is called by various names—Advanced Registry for the Ayrshires and Dutch Belted, Register of Production for the Brown Swiss, Advanced Register for the Guernseys and Holsteins, and Register of Merit for the Jerseys.

TABLE 6.—*Number of dairy cattle registered each year, by breeds, in the United States, 1926–40*

Year	Ayrshire	Brown Swiss	Guernsey	Holstein-Friesian	Jersey
1926	7,862	4,520	34,690	111,088	55,752
1927	8,401	4,366	35,471	109,963	64,077
1928	10,112	5,476	39,027	121,726	73,909
1929	11,419	6,112	40,949	125,365	71,661
1930	10,209	5,884	44,472	105,143	58,117
1931	8,876	5,419	40,844	92,346	48,473
1932	7,623	4,461	35,779	68,315	41,229
1933	8,972	4,510	29,994	98,523	35,456
1934	17,436	9,112	34,762	100,218	38,578
1935	13,854	6,420	45,037	76,885	48,222
1936	14,107	7,490	51,493	77,942	43,312
1937	14,103	8,566	50,312	79,110	43,682
1938	13,753	8,642	47,534	81,622	44,925
1939	15,198	9,996	53,889	85,598	47,100
1940	16,237	10,473	56,860	145,423	48,527

The Ayrshire, Brown Swiss, Guernsey, Holstein, and Jersey organizations have each adopted a supplementary register called the Herd Test, or Herd-Improvement Registry. This differs from the Advanced Register and Register of Merit in that breeders must test and report the production of every cow in the herd, rather than of only a few selected animals.

If the owner of registered dairy cows is a member of a dairy herd-improvement association, his whole herd will be on test in that organization. Tests made of registered cows in such associations may be used for the Herd-Improvement Test by national dairy breed associations, if the owners of the herds have applied for admission of their herds to the Herd-Improvement Test registers of the breed associations, and the records have been approved by the State agricultural colleges or experiment stations.

Requirements for admission to the breed registers of production (advanced register and herd-improvement register) and the rules under which the records must be made vary somewhat for the different breeds. Detailed information on this point may be obtained from the breed associations concerned.

WHICH BREED TO SELECT

Sometimes too much emphasis is given to the question of which breed to choose and too little to the matter of getting good individuals—that is, those that are well bred and high producers. There are three points, however, that should be considered in deciding which breed to select. These are (1) the breed that predominates in the locality where the new herd is to be located, (2) personal preference, and (3) market requirements for the product.

THE BREED THAT PREDOMINATES

A dairyman just starting with registered animals should as a rule select the same breed as his neighbors. It is difficult for an isolated small breeder to dispose of his surplus stock to advantage, while if there are many breeders with the same breed, buyers are attracted to the locality because of the better chance of getting the desired animals from one or more of the several breeders.

There are other advantages to a dairyman in having the same breed as his neighbor, such as the possibility of exchanging bulls and of owning good registered bulls cooperatively. These advantages are obtained by those having grade herds as well as by those with registered cows. Then there is also the opportunity for taking advantage of special breed sales of surplus stock, and, lastly, the advantage of bringing the community together in other endeavors which usually result where there is but one breed.

REGIONAL DIFFERENCES IN BREED PREFERENCES

As shown in table 4, there are sharp differences in the breed of dairy cattle preferred by farmers in the various parts of the country. In general, the percentage of Jerseys averages highest in the South and in areas where most of the farmers sell cream. Holsteins are most numerous in sections where the milk is sold largely for making cheese or evaporated milk, but there are also large numbers in the large herds kept in the principal market-milk areas. Guernseys are most numerous in the main dairy States, the numbers kept in market-milk areas depending in part on the differential paid for milk of high color and high test. Ayrshires and Brown Swiss are distributed somewhat as are Guernseys, but there are relatively few in the South and West. Shorthorns kept for milk are most numerous where beef production is important, chiefly in the central and western portions of the Corn Belt and in the Great Plains area.

PERSONAL PREFERENCE

In a district where no breed is established, or in sections where several breeds are about equally represented, the prospective breeder must be guided largely by his personal preference. A person usually takes a liking to one breed, for reasons not easily explainable. Naturally, he would take more interest in caring for animals of that breed than for those of a breed that he does not like so well.

Personal preference, however, must not overshadow the matter of quality of individual animals. If high-producing individuals of the breed not so well liked are available at reasonable cost, and individuals of the same quality of the breed well-liked are not available except at a much higher cost, it may be wiser to select the former, for usually a dairyman soon begins to like a breed with which he is doing well.

MARKET REQUIREMENTS FOR PRODUCT

Market requirements for the product should not be overemphasized in selecting the breed. For a time a dairyman may sell his product in a market where low-testing milk has the advantage, while later the conditions may be changed, and a high-testing milk will sell to

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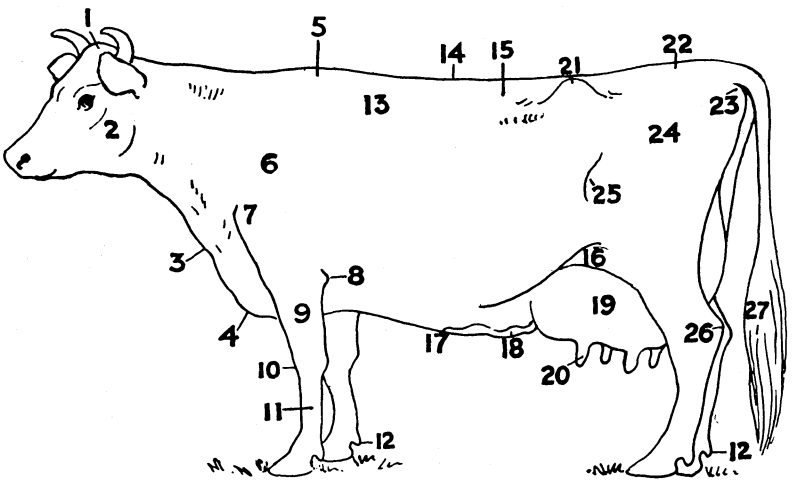
better advantage. Obviously, a breeder cannot shift from one breed to another to meet the fluctuations in market demands.

When one is selling to a city milk plant, however, the price paid for the extra butterfat over the basic test, or deducted from the standard price when the milk is below basic test, may well be considered in selecting the breed. The point here is that sometimes in some whole-milk markets the differential may favor high-testing milk, and at other times or in other markets it may favor low-testing milk.

In summing up the matter of which breed to select, this point should be kept in mind—there are good cows and poor cows in all breeds and, other things being equal, the breeder or dairyman who gets good individuals to begin with will have a good chance for success no matter what breed he selects.

THE SCORE CARD

Each breed association has a scale of points, or score card, for bulls and cows of that breed. The card gives definite values for the various characteristics of conformation, and emphasizes points requiring special attention from breeders. The purpose of the score card is to teach beginners the art of judging and also to encourage the formation



1. POLL	10. KNEE	19. UDDER
2. JAW	11. SHANK	20. TEAT
3. DEWLAP	12. DEW CLAW	21. HIP POINT
4. BRISKET	13. CROP	22. RUMP
5. WITHERS	14. CHINE	23. PIN BONE
6. SHOULDER	15. LOIN	24. THURL
7. POINT OF SHOULDER	16. FLANK	25. STIFLE
8. POINT OF ELBOW	17. MILK WELL	26. HOCK
9. FOREARM	18. MILK VEIN	27. SWITCH

FIGURE 1.—Diagram of a cow, showing names and locations of parts.

of what is considered by breeders, through their associations, as the ideal type. It tends to make the breed uniform in appearance. The scale of points for a cow is given in this bulletin with the description of each breed.

In order to make the score cards more useful, figure 1 is a diagram which names and locates the various parts referred to on the score cards.

AYRSHIRE

ORIGIN AND HISTORY

The Ayrshire breed originated in southwestern Scotland, in the county of Ayr, in the latter part of the eighteenth century. Doubtless cattle from several neighboring countries were used in the formation of the breed, though there is no record of direct foreign importations to the county of Ayr at that time. While this foreign blood probably had a good effect on the ultimate value of the breed, the substantial and efficient development of the breed seems to have come about mostly through subsequent judicious selection and mating.

IMPORTATION AND DISTRIBUTION

The first importations of Ayrshires into the United States occurred in 1822. Since then Ayrshires have been imported almost every year, either from Scotland or Canada. Table 1 shows that in 1932 there were in the United States 317,000 animals carrying more or less Ayrshire blood. According to table 2, there were, in 1930, 48,236 registered Ayrshires in the United States. By January 1, 1941, it is estimated, the number of registered Ayrshires had increased to 81,340.[2] Ayrshires are scattered through practically all the States, though by far the largest numbers are in the Northeastern States.

GENERAL CHARACTERISTICS

The Ayrshire has a well-built, stocky body, not heavily covered with flesh, but giving the appearance of great vigor and vitality. The calves weigh from 60 to 80 pounds at birth. The weight of mature bulls (fig. 2) varies from 1,500 to 2,000 pounds; with an average of about 1,650 pounds, while mature cows range in weight from 850 to 1,250 pounds, and average about 1,050 pounds.

The color varies from almost pure white to nearly all cherry red or brown, with any combination of these colors. Usually the tail is white. The horns are large, and turn gracefully outward, then forward and back, giving a distinctive appearance to the head.

Ayrshire cows are noted for their symmetrical udders, which extend well forward and back, with no tendency to be pendent. The quarters are generally even; the teats medium in size and well-placed (figs. 3 and 4).

[2] This figure has been calculated from yearly registrations, the allowances for deaths being estimated and 1930 census figures used as a check.

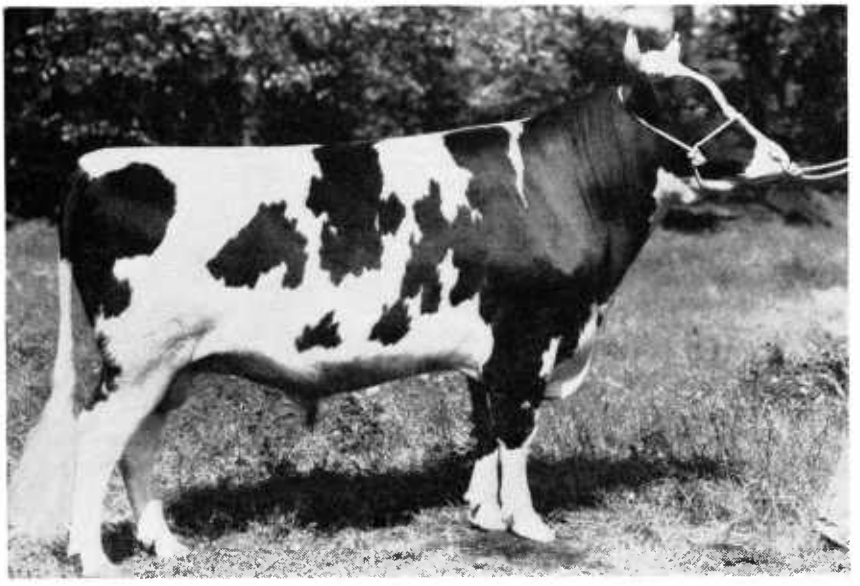


FIGURE 2.—Ayrshire bull, Burnside Barr Adjutant, Grand Champion, National Dairy Show, 1940. (Canadian bull).

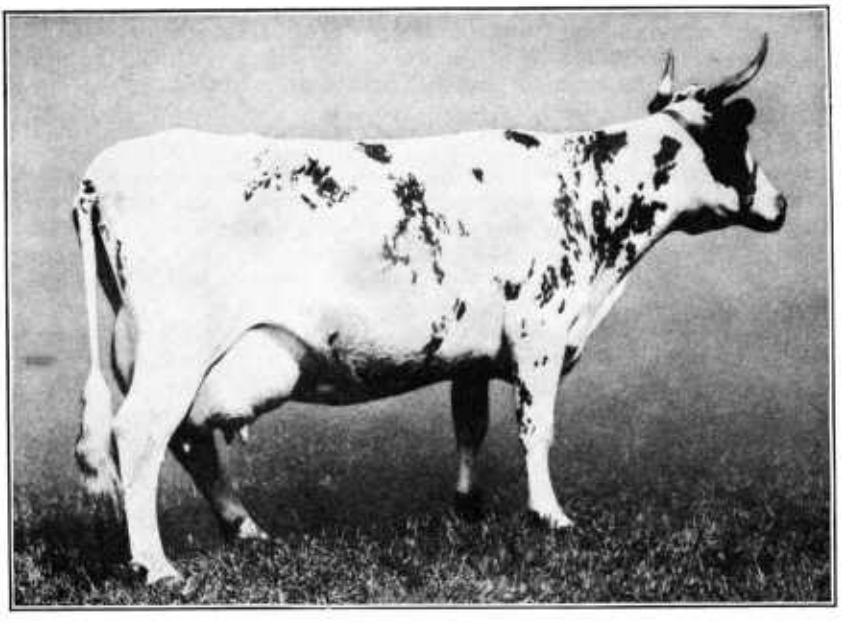


FIGURE 3.—Ayrshire cow, Lily of Willowmoor 22269. Highest butterfat producer of the breed in the United States.

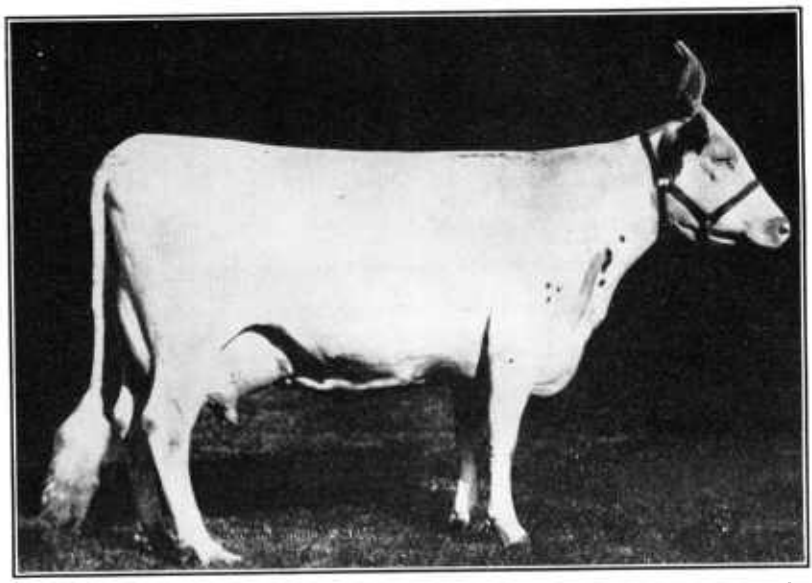


FIGURE 4.—Ayrshire cow, Garclaugh May Mischief 27944. Highest milk producer of the breed in the United States.

SCALE OF POINTS FOR AYRSHIRE COW OR HEIFER

Anatomy	Perfect score
Head	9
Forehead, reasonably broad between the eyes and slightly dished	1
Face, of medium length, clean cut, feminine; the bridge of the nose straight to nostrils	1
Muzzle, broad and strong, with large open nostrils	2
Jaws, wide at the base, well muscled, and strong	1½
Eyes, moderately large, placid, full, and bright	1½
Ears, medium size, fine, and carried alertly	½
Horns, small at base, not coarse nor too long; inclining upwards	1½
Neck, medium length, smoothly blending with shoulders and throat, showing feminine refinement	2
Shoulders, long, sloping and tapering from the base to the top of the shoulder blades; neatly and firmly attached to the body wall; tops of the blades not extending to the top of chine	5
Chest, full, and wide between and back of forearms; brisket light and refined	5
Chine, straight, strong, open jointed, narrow at the top, nicely blending into shoulders and a well-sprung rib	3
Crops, full, level with shoulders	4
Barrel, medium length, deep, but strongly held up; rib, well sprung; bones long, flat, and wide apart	10
Loin, broad, strong, and level with hips	4
Rump or pelvic area, wide, long, and roomy; top line extending level from loin to and including tail head	
Hips, wide, with points rather sharply defined and level with back line	
Pin bones, wide apart and nearly level with hip bones; well defined, not overlaid with fat	12
Thurls, broad and set slightly below line from hip points to pin bones	
Tail head, level with back line, neatly molded, and showing no evidence of roughness	

SCALE OF POINTS FOR AYRSHIRE COW OR HEIFER—Continued

	Perfect score
Tail, long and fine, with full switch	1
Flank, deep, slightly arched, and refined	1
Thighs, deep, straight and trim when viewed from the side. Flat and broad on sides. Twist or inside of thighs well cut out for udder development, with escutcheon well defined and carried high	2
Legs and feet, widely and squarely set under body; clean flat bone, front legs straight; hind legs nearly straight when viewed from rear; hocks and pasterns neatly and firmly molded; feet round, with plenty of depth at heels	8
Hide and hair, mellow, elastic hide of medium thickness; hair fine and soft	4
Mammary system	30
Size and shape of udder, broad, level, capacious, extending well forward and high behind; quarters even and of uniform size; floor of udder should be reasonably level and not deeply cut up between the quarters	10
Attachment of udder, attached well forward with a neat and firm junction at body wall; carried wide and high behind, no evidence of breaking of tissues supporting front quarters nor of dropping of floor of udder	6
Texture of udder, fine, soft, and pliable, with light skin	4
Size, shape, and placement of teats, convenient size, symmetrical and nearly uniform, each hanging perpendicularly under the quarter; funnel-shaped teats objectionable	5
Veining and milk wells, mammary veins large, long, tortuous, branching, and entering large or numerous milk wells; small veins clearly defined on udder	5
Perfect anatomy score	100

Breed Characteristics

In addition to the foregoing anatomy score of 100 points, which is applicable to all dairy cows, it has been deemed expedient to consider the following factors covering desirable Ayrshire breed characteristics.

To use this supplementary schedule, score the number of points in which the animal is deficient in each of the following breed characteristics, and deduct from the foregoing anatomy score the total number of points in which the animal is deficient.

Style and quality, alert but docile; having an impressive carriage; graceful walk; and, above all, displaying evidence of feminine refinement and outstanding dairy character	7
Symmetry and balance, a symmetrical balancing of all the parts and the proper proportioning of the various parts of each other	7
Size and weight, mature cows should weigh from 1,100 to 1,400 pounds, depending on period of lactation	4
Color, red of any shade, mahogany, brown, or these with white, or white, each color clearly defined. Distinctive red and white markings preferable; black or brindle markings strongly objectionable	2
Total deductions possible	20

PRODUCTION

Ayrshire milk contains about 4 percent butterfat, which is about the average for all the dairy breeds. The 7,129 yearly records completed by Ayrshire cows and heifers in the Advanced Registry up to January 1, 1941, average 10,469 pounds of milk and 416 pounds of butterfat per cow with an average test of 3.98 percent.

Under Herd-Test rules, 30,593 records were completed up to January 1, 1941, averaging 8,488 pounds of milk, 343 pounds of butterfat, and a test of 4.04 percent.

The 10 highest butterfat and the 10 highest milk producers among the Ayrshires, up to January 1, 1941, are listed in table 7.

TABLE 7.—*The 10 highest yearly butterfat and milk producers of the Ayrshire breed in the United States*

Cow	Butterfat	Cow	Milk
	Pounds		*Pounds*
Lily of Willowmoor 22269	955.6	Garclaugh May Mischief 27944	25,320
Vi's Bountiful Lassie 58096	923.2	Vi's Bountiful Lassie 58096	24,556
Auchenbrain Brown Kate 4th 27943	917.6	Mistress Thistle of South Farm 49818	23,029
Garclaugh May Mischief 27944	894.9	Auchenbrain Brown Kate 4th 27943	23,022
Auchenbrain Yellow Kate 3d 36910	888.3	Lily of Willowmoor 22269	22,596
Agawam Bess Howie 43781	876.1	Garclaugh Spottie 27950	22,589
Harperland Spicy Lass 40652	866.2	Nancy Whitehall 47810	22,074
Jean Armour 3d 32219	859.6	Jean Armour 3d 32219	21,938
Nancy Whitehall 47810	858.8	Bloomer's Queen 39119	21,820
Bloomer's Queen 39119	856.4	Willowmoor May Mischief 2d A 34173	21,161

BULLS

Table 8 lists 10 registered Ayrshire bulls that were proved in dairy herd-improvement associations and reported in the Bureau of Dairy Industry proved-sire lists, published by the United States Department of Agriculture between November 1, 1935, and January 1, 1941. For a bull to be considered for inclusion in this table, he must have met the following requirements:

(1) He must have had five or more unselected daughters with production records, whose dams also had production records.

(2) His daughters must have had an average 305-day butterfat production which exceeded that of the dams by 25 or more pounds.

Records of the daughters and of their dams were converted where necessary to a twice-a-day milking, 6-year-old basis, and if a cow had more than one record, the average of all her records was taken.

From the sires that met these conditions the 10 whose daughters average the highest in butterfat production were selected.

TABLE 8.—*Ten registered Ayrshire sires proved in dairy herd-improvement associations*

Name of sire	Daughter-dam comparisons	Average butterfat production of daughters	Increase over dams
	Number	*Pounds*	*Pounds*
Deepwells Conquistadore 43956	14	491	63
Penshurst Leto Lad 44041	6	472	79
Lynes Bonnie Royal 44097	6	438	29
Bay State Perry 39515	5	438	52
Penshurst Gerald 38087	11	434	119
Reginald of Elmcrest 39949	7	431	108
Captain Clip of Sandhill 36656	15	424	73
Strathglass Topsader 43678	9	422	52
King Henry Star 35805	11	420	110
Ash Grove Silk Stocking 36083	5	410	69

BROWN SWISS

ORIGIN AND HISTORY

The original home of the Brown Swiss breed is in Switzerland, where the breed has been developed during many centuries. It is probably one of the oldest in existence, and it is thought that no outside blood has been introduced since records began.

IMPORTATION AND DISTRIBUTION

The first importation of Brown Swiss into the United States was made in Massachusetts in 1869 and another in 1882. Several importations have been made since but only in small numbers. After 1906 there were only a few importations because of regulations due to the prevalence of foot-and-mouth disease in Europe. Table 1 shows that, in 1932, there were in the United States 248,000 animals carrying more or less Brown Swiss blood. According to table 2, there were, in 1930, 25,734 registered Brown Swiss animals in the United States. By January 1, 1941, it is estimated, the number of registered Brown Swiss had increased to 50,805.[3] Brown Swiss are found in nearly all States, the largest numbers being in Wisconsin, Illinois, Iowa, Minnesota, New York, Michigan, Ohio, and Pennsylvania.

GENERAL CHARACTERISTICS

The large frame of the Brown Swiss cattle indicates that they have been developed for service as draft animals as well as for milk. They are sturdy in appearance, with well-developed brisket and dewlap, and with the body well-covered with flesh (figs. 5, 6, and 7). The calves weigh from 65 to 90 pounds at birth. The heifers are slow in

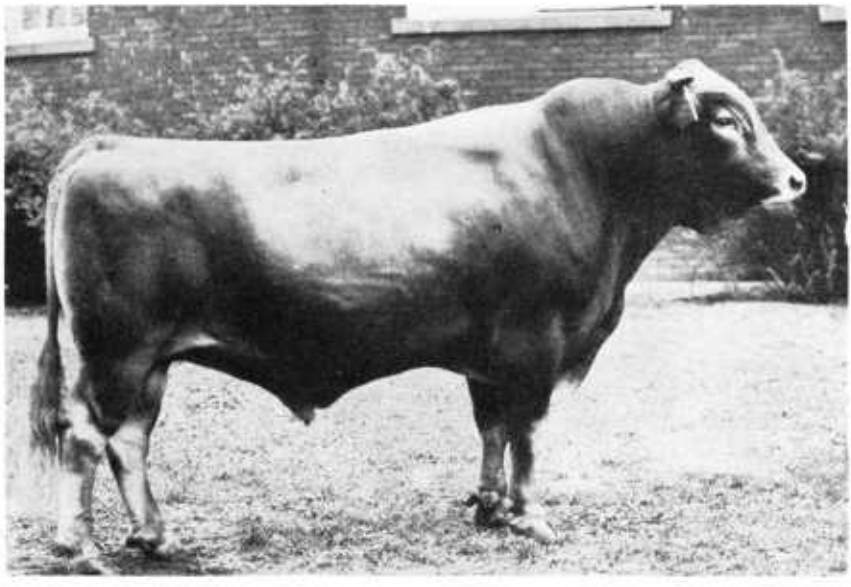


FIGURE 5.—Brown Swiss bull, Lancaster's College Boy 25182. Grand Champion, National Dairy Show, 1940.

maturing. When full-grown, the cows weigh from 1,100 to 1,500 pounds, averaging about 1,300 pounds; and the bulls range in weight from 1,500 to 2,200 pounds, averaging about 1,750 pounds.

[3] See footnote 1, p. 9.

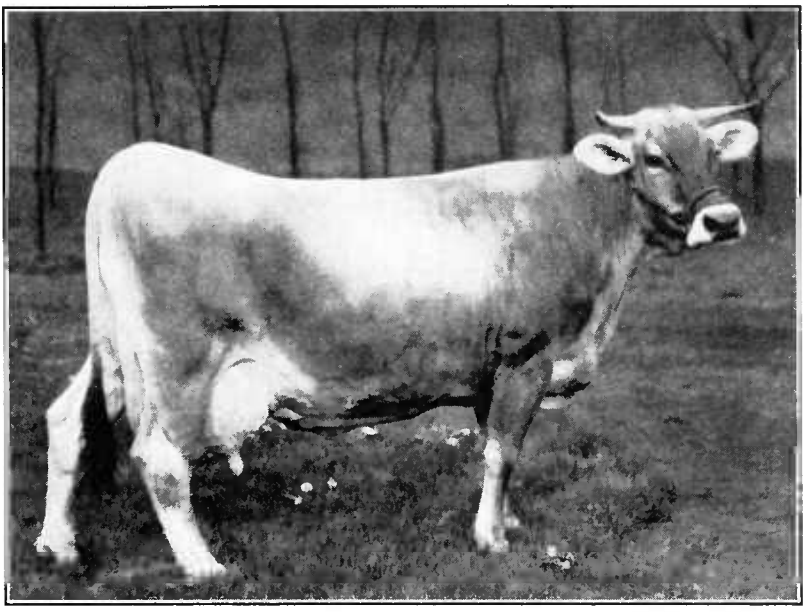


FIGURE 6.—Brown Swiss cow, Illini Nellie 26578. Highest milk and butterfat producer of the breed in the United States.

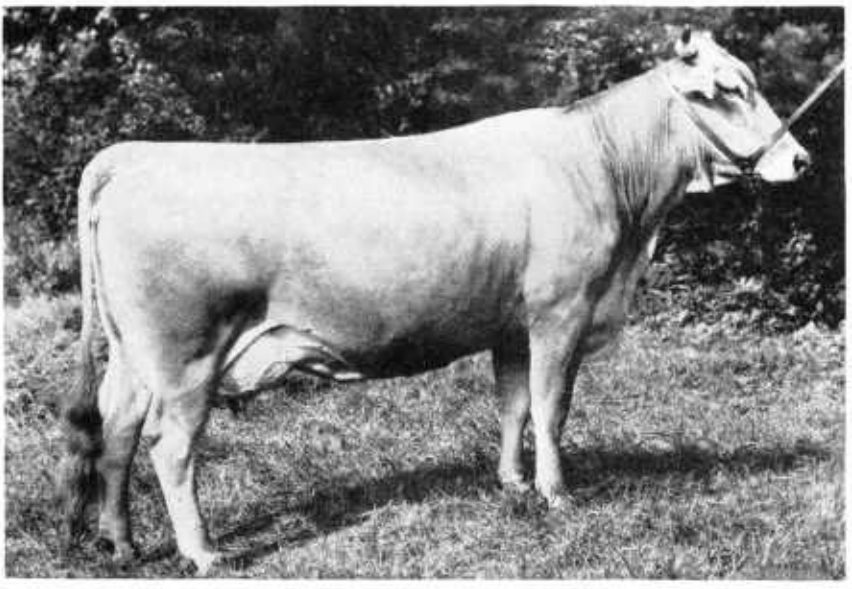


FIGURE 7.—Brown Swiss cow, Jane of Vernon 5th 65386. Grand Champion, National Dairy Show, 1940.

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The color of the Brown Swiss varies from dark to light brown, and at some seasons of the year approaches gray. There is usually a light stripe of gray along the back. White splashes near the udder are found on some animals, but white splashes on the sides of the body or on the back are objectionable. The hair between the horns is usually of a lighter shade than that on the body. The nose, switch, tongue, and horn tips are always black, and there is usually a light or mealy ring around the muzzle.

SCALE OF POINTS FOR BROWN SWISS COW

	Perfect score
General appearance and breed type	15
Feminine, milky, and vigorous.	
A straight, strong, vigorous, and stylish animal, showing Brown Swiss character, with a symmetrical balancing and harmonious blending of all parts. A cow in milk should give a general impression of milkiness. She should be well grown and rugged without coarseness. (Either undersized or coarse animals undesirable.) Size with quality desired. The minimum weight for a cow in milk should be at least 1,300 pounds.	
Head and neck	10
Muzzle, wide. Nostrils large and open. Jaw strong.	
Face, straight, clean cut, facial lines prominent; full bright eye.	
Forehead, wide, moderately dished, neat at poll.	
Horns, medium size, curving forward, and slightly up. Neatly dehorned animals shall not be penalized.	
Neck, medium length, throat moderately clean, neck should blend smoothly with head and shoulders.	
Body	35
Constitution	10
Shoulders, moderately clean-cut at withers, wide at points of shoulder, but blended smoothly with the body.	
Crops, full. Forerib well sprung, full behind the shoulders.	
Chest, full, deep and wide, the width evidenced by distance between forelegs.	
Condition and health, thrifty and vigorous appearance with a moderate degree of fleshiness. Hide mellow, loose, of medium thickness, neither papery nor hard.	
Capacity	11
Barrel, long, wide and deep. Strongly supported. Ribs well arched and wide apart.	
Topline	12
Back, straight and strong.	
Loin, broad, strong, level.	
Rump, level, long and wide.	
Hook bones far apart.	
Pin bones, wide apart nearly level with hooks.	
Thurls, wide apart, set well up toward the line from hooks to pin bones.	
Tail and tail head. Tail head level with back and loin, neatly set between and smoothly blending with pin bones, tapering to a long slender tail with a full switch.	
Thighs	2
Trim, inside well cut out for a large udder.	
Mammary system	35
Udder	30
Capacity, when fully distended with milk, long, wide, of moderate depth, giving a capacious udder	8
Shape, wide, extending reasonably well forward and closely attached to the body in front; rear attachment high and wide; rear udder extending full width between rather than in front of hind legs; floor reasonably level without marked strictures or clefts; quarters uniformly and symmetrically developed	13

SCALE OF POINTS FOR BROWN SWISS COW—Continued

	Perfect score	
Mammary system—Continued.		
Udder—Continued.		
Texture, pliable, free from fat or fibrous tissue; collapsible and spongy in texture when milked out	5	
Teats, uniform; of convenient size and length; free from lumps, warts, extra openings and leakage (extra teats objectionable if they interfere with milking); extremely large teats objectionable. Teats squarely placed on udder and hanging plumb	4	
Milk veins and wells		5
(Age of cow and stage of lactation to be considered.) Veins on belly large, long, tortuous; veins on udder numerous and clearly defined; milk wells large and numerous.		
Feet and legs		5
Widely and squarely set, hocks and pasterns strong, forelegs straight; feet appearing short, well-rounded with deep heel and level sole; clean flat bone.		
Total		100

NOTE.—Color: The preferred color is a medium brown or silver brown, with a light-colored band around a dark nose.

PRODUCTION

The Brown Swiss produce milk of average quality as compared with the other breeds of dairy cattle. The 1,195 cows and heifers that had completed yearly production records and had been admitted to the Register of Production up to January 1, 1941, had an average yearly production of 13,699 pounds of milk and 552 pounds of butterfat per cow, with an average butterfat test of 4.03 percent.

Under Herd-Improvement rules Brown Swiss herds containing 984 cows that completed yearly production records up to January 1, 1938, had an average production of 8,576.8 pounds of milk and 353 pounds of butterfat per cow, with an average test of 4.1 percent.

The 10 highest butterfat and the 10 highest milk producers among the Brown Swiss, up to January 1, 1941, are listed in table 9.

TABLE 9.—*The 10 highest yearly butterfat and milk producers of the Brown Swiss breed in the United States*

Cow	Butterfat	Cow	Milk
	Pounds		*Pounds*
Illini Nellie 26578	1,200.4	Illini Nellie 26578	29,570
Mary's Nell 36395	1,109.7	Mary's Nell 36395	29,487
Swiss Valley Girl 10th 7887	1,106.3	Swiss Valley Girl 10th 7887	27,514
Jane of Vernon 29496	1,075.6	Believe 4245	25,848
June's College Girl 11427	1,062.3	Alice Lee 2nd 8777	24,845
Privet of Lee's Hill 36503	1,037.7	Gertrude Baron 38520	24,668
Greenwood Valley Lass 18823	1,037.1	June's College Girl 11427	24,572
Winnie of River Dale 34280	1,029.3	Clepe E. 14082	24,226
Swiss Girl F.C. 13853	1,003.8	Miss Mary W. of Vandalia 5th 21277	24,018
Alice of Lake View 38007	1,003.0	Jane of Vernon 29496	23,569

BULLS

Table 10 lists 10 registered Brown Swiss bulls that were proved in dairy herd-improvement associations and reported in the Bureau of Dairy Industry proved-sire lists, published by the United States Department of Agriculture between November 1, 1935, and January

1, 1941. For a bull to be considered for inclusion in this table, he must have met the following requirements:

(1) He must have had five or more unselected daughters with production records, whose dams also had production records.

(2) His daughters must have had an average 305-day butterfat production which exceeded that of the dams by 20 or more pounds.

Records of the daughters and of their dams were converted where necessary to a twice-a-day milking, 6-year-old basis, and if a cow had more than one record, the average of all her records was taken.

From the sires that met these conditions the 10 whose daughters average the highest in butterfat production were selected.

TABLE 10.—*Ten registered Brown Swiss sires proved in dairy herd-improvement associations*

Name of sire	Daughter-dam comparisons	Average butterfat production of daughters	Increase over dams
	Number	*Pounds*	*Pounds*
June's College Girl's Wallace of Walhalla 24084	7	497	79
Louie of Bowerhome 26539	8	478	61
Bell Boy's Dairyman 31574	8	466	124
Baron of Spring Valley 17460	6	465	38
June's College Girl's Grandson (Twin) 18695	12	442	107
Nevard of Bowerhome 23652	25	432	67
Geno's Carl of Mt. Vernon 25090	11	431	23
Zella C's College Boy 17585	14	425	91
Sam of Melrose's Prospect 30954	5	415	63
Marvel of Crescent View 30630	5	405	50

DUTCH BELTED

ORIGIN AND HISTORY

The Dutch Belted breed originated in the Netherlands about two centuries ago. The breed gets its name from both the original home and from the distinctive color marking. It has probably been developed from the same cattle as the Holstein-Friesian. The early records show that the Dutch Belted were bred by the nobility of Holland, and while the unusual color marking was perhaps the chief basis of selection, the qualities of milk production and dairy refinement were not lost sight of.

IMPORTATION AND DISTRIBUTION

The first importation of Dutch Belted cattle into the United States was made probably in 1838. The first importation of importance, however, was made in 1840 by P. T. Barnum for show purposes. These cattle were later placed on a farm, and this seems to be the beginning of Dutch Belted cattle in the United States. A number were imported from that time on until 1885, and some in 1906 and 1907. Since then no importations have been made on account of the prevalence of foot-and-mouth disease in Europe. No estimate is available for the number of registered animals of this breed now in the United States.

GENERAL CHARACTERISTICS

Dutch Belted cattle (figs. 8 and 9) have the general dairy conformation, which includes fineness of bone and freedom from beefiness. The aim of the breeders of these cattle is to breed animals that have no white other than that of the standard belt around the body. This belt begins back of the shoulder and may extend to the front of the hips but must not be narrower than 6 inches at the narrowest point. There must be no black spots in the belt on females. The width of the belt on each animal tends to be uniform around the body. The remainder of the animal is coal black except that females may have not to exceed 3 inches of white on hind feet above the hoof and males may have not to exceed 2½ inches of white on one hind foot above the hoof.

Calves at birth range in weight from 60 to 90 pounds. Well-developed mature cows weigh from 1,000 to 1,500 pounds, averaging about 1,200 pounds; and bulls from 1,500 to 2,000 pounds, averaging about 1,700 pounds.

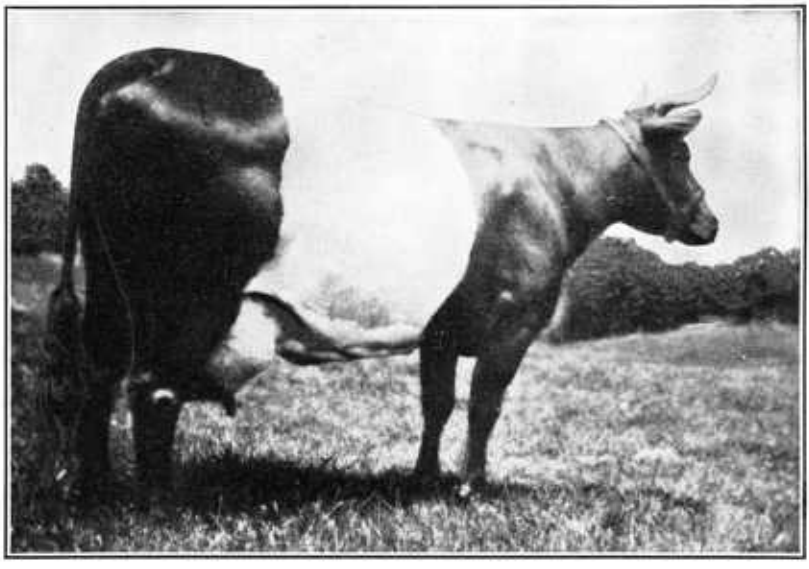

FIGURE 8.—Dutch Belted cow, Loraine of Brunswick 3020. Leading butterfat and milk producer of the breed in the United States.

PRODUCTION

In the percentage of butterfat contained in her milk, the Dutch Belted cow ranks between the Holstein and the Ayrshire. The 76 Dutch Belted cows and heifers that finished yearly official records up to January 1, 1938, show an average production of 10,570 pounds of milk and 417 pounds of butterfat, with an average test of 3.94 percent.

The 10 highest producers of butterfat and the 10 highest producers of milk among Dutch Belted cows, up to January 1, 1938, are listed in table 10.

TABLE 11.—*The 10 highest yearly butterfat and milk producers of the Dutch Belted breed in the United States*

Cow	Butterfat	Cow	Milk
	Pounds		*Pounds*
Loraine of Brunswick 3020	816.5	Loraine of Brunswick 3020	18,211
Marilyn 3232	793.2	Gem of Columbia 2038	17,268
Gloria 3231	780.1	Marilyn 3232	16,878
Sally Ann 3838	736.9	Gloria 3231	16,546
Green River Neritta 3d 3065	691.7	Sally Ann 3838	16,328
Eunice Ann 3423	681.4	Green River Neritta 3d 3065	16,074
Angelina 2641	668.1	Green River Neritta 2d 2958	16,055
Gem of Columbia 2038	633.9	Angelina 2641	16,023
Green River Neritta 2d 2958	582.2	Eunice Ann 3423	14,935
Glenbeulah's Beauty 2172	531.2	Elsie Blossom 2829	14,688

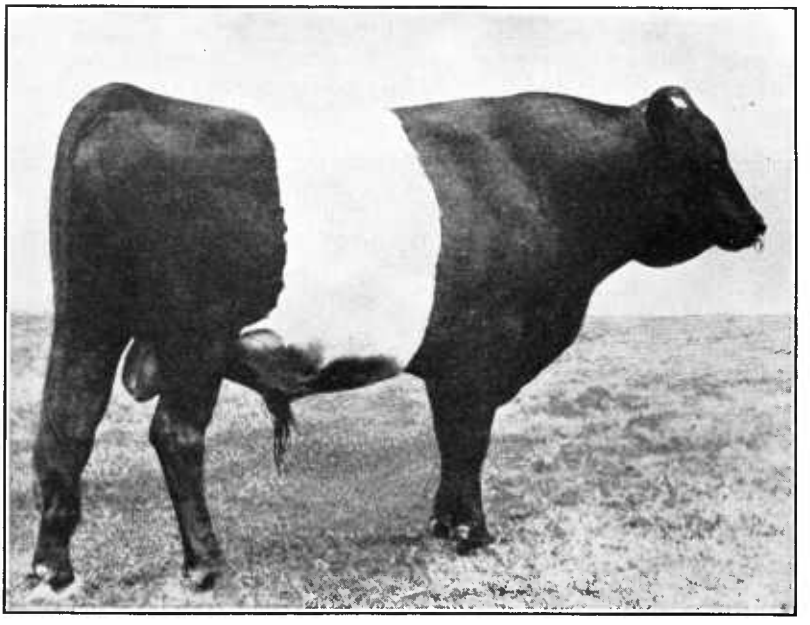

FIGURE 9.—Dutch Belted bull, Keith 934.

GUERNSEY

ORIGIN AND HISTORY

The Guernsey breed originated in the Channel Islands, near the north coast of France. It is thought that this breed has been developed from a cross between the large red and brindle cattle of Normandy and the small red cattle of Brittany, in France. The exact date of origin is unknown, but it was probably in the latter part of the seventeenth century or before.

All the cattle in the Channel Islands were at one time known as Alderneys. After laws had been enacted forbidding the importation of cattle from the Continent or between the islands of Guernsey and Jersey, two distinct breeds came to be recognized The one on the islands of Alderney, Sark, and Guernsey became known as the Guernsey breed and the one on Jersey Island as the Jersey breed.

IMPORTATION AND DISTRIBUTION

The first cattle from the Channel Islands brought to the United States were called Alderneys. They were imported in the latter part of the eighteenth century and may have been either Guernsey or Jersey cattle. The first animals recorded in the herdbook of the American Guernsey Cattle Club were brought over in 1830. A few more were imported in the next two decades, but not until about 1870 were extensive importations made. Since that time importations have been made nearly every year.

Table 1 shows that, in 1932, there were in the United States about 3,709,000 animals carrying more or less Guernsey blood. According to table 2, there were 200,721 registered Guernseys in the United States in 1930. By January 1, 1941, it was estimated, the number of registered Guernseys had increased to 279,314.[5]

GENERAL CHARACTERISTICS

Mature Guernsey cows (figs. 10 and 11) weigh from 900 to 1,400 pounds, averaging about 1,100; and the bulls (fig. 12) weigh from 1,200 to 2,200 pounds, averaging about 1,700 pounds. The calves weigh from 55 to 85 pounds at birth and reach maturity early.

The color of the Guernseys is fawn and white, with fawn predominating. A light cherry red with white is also found. Sometimes white may be entirely lacking except on the legs. The switch is usually white and the tongue light in color. The horns are of moderate size and amber in color. The skin is yellow.

SCALE OF POINTS FOR GUERNSEY COW

	Perfect score
General appearance	24
Attractive individuality, revealing vigor, femininity and Guernsey character with a harmonious blending and correlation of parts.	
Color, a shade of fawn with white markings.	
Size, mature cows in milk, about 1,100 pounds.	
Head, medium in length, clean-cut; broad muzzle with open nostrils; lean, strong jaw; full, bright eyes; forehead broad between the eyes and moderately dished; bridge of nose straight. Ears medium size and carried alertly.	
Horns, small at base, medium length curved forward, yellow in color at base.	
Shoulder blades, set smoothly against chest wall and withers, forming neat junction with the body.	
Back, strong and appearing straight.	
Loin, broad, nearly level.	
Rump, long, wide; top-line level from loin to and including tail head.	
Hips, wide, approximately level laterally with back, free from excess tissue.	
Thurls, wide apart.	
Pin bones, wide apart and slightly lower than hips, well defined.	
Tail head, slightly above and neatly set between pin bones.	
Tail, long and tapering with nicely balanced switch.	
Dairy character	20
Animation, angularity, general openness, and freedom from excess tissue.	
Neck, long and lean, blending smoothly into shoulders and brisket; clean-cut throat and dewlap.	
Withers, well defined and wedge-shaped with the dorsal processes of the vertebrae rising slightly above the shoulder blades.	
Ribs, wide apart.	
Thighs, incurving to flat from the side: wide apart when viewed from the rear, providing sufficient room for the udder and its attachment.	
Skin, of medium thickness, loose and pliable. Hair fine.	

[5] See footnote 1, p. 9.

SCALE OF POINTS FOR GUERNSEY COW—Continued

	Perfect score
Body capacity	20
Relatively large in proportion to size of animal, providing digestive capacity, strength and vigor.	
Barrel, long and deep, strongly supported, ribs wide apart and well sprung; depth and width tending to increase toward rear of barrel.	
Heart girth, large, resulting from long, well-sprung foreribs, wide chest floor between front legs, and fullness at the point of elbow.	
Mammary system	30
A large, strongly attached, well carried, quality udder for heavy production and a long period of usefulness.	
Udder capacity and shape, long, wide, and of moderate depth. Extending well forward, strongly attached, reasonably level floor. Rear attachment, high and wide. Quarters evenly balanced and symmetrical.	
Texture, soft, pliable and elastic.	
Teats, of convenient size, cylindrical in shape, free from obstructions, well apart and squarely placed, plumb.	
Mammary veins, long, tortuous, prominent and branching with large numerous wells. Veins on udder numerous and clearly defined.	
Feet and legs	6
Squarely set, clean-cut and strong.	
Forelegs, straight.	
Hind legs, nearly perpendicular from well defined hock to pastern. When viewed from behind, legs wide apart and nearly straight. Bone, flat and flinty, tendons well defined. Pasterns, strong and springy.	
Feet, appearing short, well rounded with deep heel and level sole.	
Total	100

PRODUCTION

Guernsey milk usually carries a high percentage of butterfat and a yellow color.

The 64,976 Guernsey records completed by 52,333 cows in the Advanced Register up to January 1, 1941, average 10,105 pounds of milk containing 502.3 pounds of butterfat, and 4.97 percent of butterfat.

Under Herd-Improvement rules Guernsey cows completed 11,887 yearly records up to January 1, 1941, with an average production of 8,590.5 pounds of milk and 422.9 pounds of butterfat, with a test of 4.92 percent.

The 10 highest butterfat and the 10 highest milk producers among the Guernseys, up to January 1, 1941, are shown in table 12.

TABLE 12.—*The 10 highest yearly butterfat and milk producers of the Guernsey breed in the United States*

Cow	Butterfat	Cow	Milk
	Pounds		*Pounds*
Cathedral Rosalie 334299	1,213.1	Murne Cowan 19597	24,008
Noranda's Milkmaid 266975	1,155.8	Cathedral Rosalie 334299	23,714
Anesthesia Faith of Hill Stead 114354	1,112.5	Grassland Zenoria 185315	22,848
Tarbell Farms Royal Lenda 467961	1,109.0	Topsy of Thousand Springs 137339	22,000
Countess Prue 43785	1,103.3	Pet of LaGrange 2d 48429	21,968
Murne Cowan 19597	1,098.2	Trixie Alice of Cowhan Farm 255436	21,932
Superb's Faithful 410579	1,077.4	Imp. Surprise of Brookmead 281287	21,341
May Rilma 22761	1,073.4	Grassland Valtype 356560	21,284
Baudy's Daisy of Buena Vista 212457	1,063.4	Peterkin's Beauty of Fairview S. 113341	21,111
Forges Royal Tilly 405115	1,058.9	Katherine's Trixie 100396	21,071

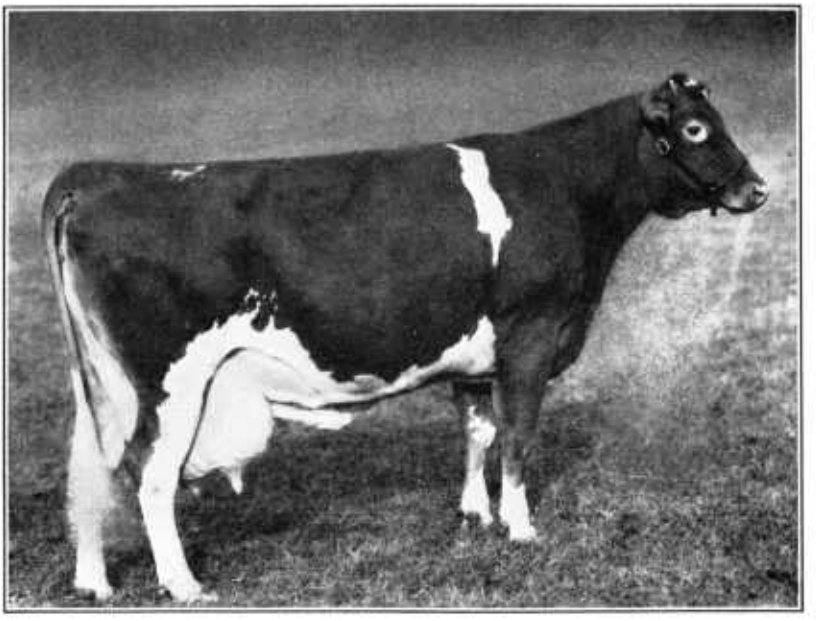

FIGURE 10.—Guernsey cow, Cathedral Rosalie 334299. Highest butterfat producer of the breed in the United States.

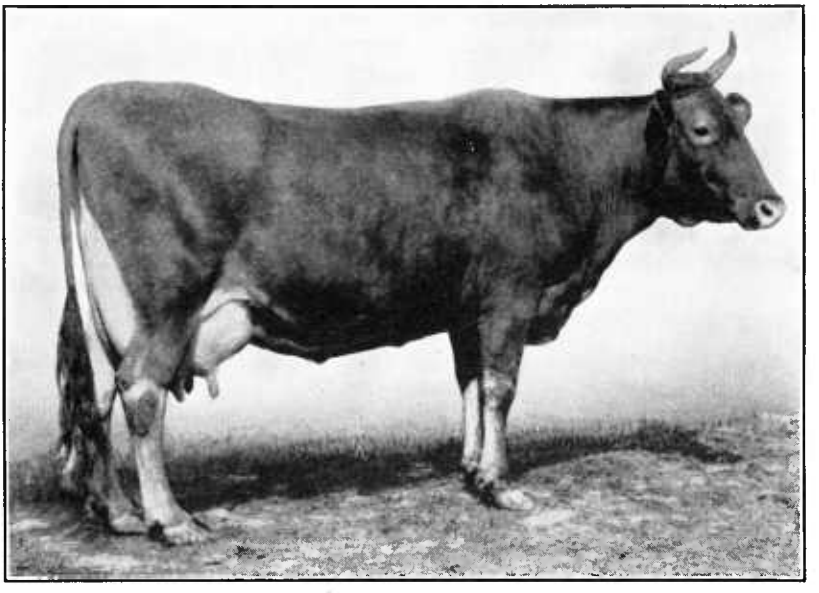

FIGURE 11.—Guernsey cow, Murne Cowan 19597. Highest milk producer of the breed in the United States.

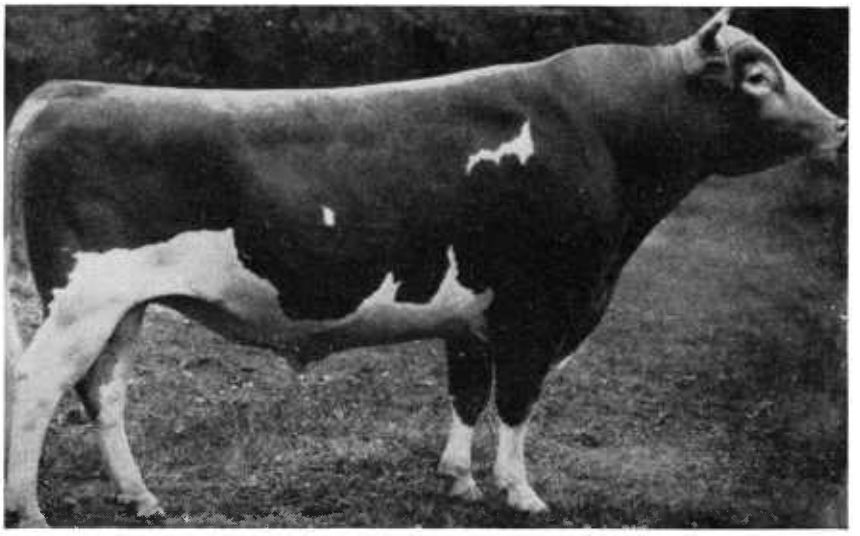

FIGURE 12.—Guernsey bull, Valleywood Valiant Hero 235690. Grand Champion, National Dairy Show, 1940.

BULLS

Table 13 lists 10 registered Guernsey bulls that were proved in dairy herd-improvement associations and reported in the Bureau of Dairy Industry proved-sire lists, published by the United States Department of Agriculture between November 1, 1935, and January 1, 1941. For a bull to be considered for inclusion in this table, he must have met the following requirements:

(1) He must have had 10 or more unselected daughters with production records, whose dams also had production records;

(2) His daughters must have had an average 305-day butterfat production which exceeded that of the dams by 25 or more pounds.

Records of the daughters and their dams were converted where necessary to a twice-a-day milking, 6-year-old basis, and if a cow had more than one record, the average of all her records was taken.

From the sires that met these conditions the 10 whose daughters average the highest in butterfat production were selected.

TABLE 13.—*Ten registered Guernsey sires proved in dairy herd-improvement associations*

Name of sire	Daughter-dam comparisons	Average butterfat production of daughters	Increase over dams
	Number	*Pounds*	*Pounds*
Florhaun Superior 70439	29	518	131
Sunnyvale Sun 103167	13	495	49
Argilla Catamount 219182	10	492	34
Gayhead's Mohammed 209211	10	486	192
Esperanza of Magnolia Farm 124464	17	482	44
Grassland Sequel Model 183294	11	481	132
Excalibur A Gordon 209639	10	473	90
Sir Gladwood of Bell Boy 199413	10	470	38
Loma Maximus 185999	13	468	74
Bethany Adventurer 172793	17	468	52

HOLSTEIN-FRIESIAN

ORIGIN AND HISTORY

The cattle from which our present Holstein-Friesian breed has descended were developed in the northern part of the Netherlands, especially in the Province of Friesland, and in the neighboring Provinces of northern Germany. The time of their origin as a recognized distinct breed is unknown, but it is probable that they have been selected for their dairy qualities for about 2,000 years.

Before 1885 there were two associations furthering the interests of this breed in the United States. One maintained a Holstein herdbook, and the other a Dutch-Friesian herdbook. In 1885 the two associations were combined into the Holstein-Friesian Association of America, and from that time on only one herd register has been maintained. This is known as the Holstein-Friesian herdbook. While the official name of the breed is Holstein-Friesian, the single word "Holstein" is more common in ordinary use.

IMPORTATION AND DISTRIBUTION

The first importations of Holsteins into the United States were made in 1795, and afterwards a few were brought in from time to time up to 1879, following which heavy importations were made each year until 1887. Thereafter only a few were imported up to 1905, and since then, because of the prevalence of foot-and-mouth disease in Europe, very few have been imported.

Table 1 shows that in 1932 there were in the United States 9,465,000 animals carrying more or less Holstein blood. According to table 2, there were, in 1930, 649,739 registered Holsteins in the United States, It is estimated that on January 1, 1941, the number of registered Holsteins was 529,511.[7] Holstein cattle are found throughout all the 48 States, though by far the largest number are in New York, Wisconsin, Pennsylvania, Ohio, Michigan, and Illinois, in the order named. These 6 States probably contain more than 60 percent of the registered Holstein cattle in the United States.

GENERAL CHARACTERISTICS

The Holsteins (figs. 13, 14, and 15) are the largest of the dairy breeds. They have large frames, not heavily covered with flesh. The calves weigh from 70 to 105 pounds at birth. The mature bulls weigh from 1,700 to 2,200, and average about 2,000 pounds; and the mature cows weigh from 1,200 to 1,750, and average about 1,300 pounds. The color is black and white, with the colors sharply defined rather than blended. They may be nearly all white or black, but no solid-color animal can be registered.

[7] See footnote 1, p. 9.

SCALE OF POINTS FOR HOLSTEIN-FRIESIAN COW

	Perfect score
Forehead, broad between the eyes; dishing	2
Face, of medium length, clean-cut, feminine; the bridge of the nose straight	1
Muzzle, broad, with strong lips; nostrils, large and open; jaws, strong	3
Ears, of medium size; of fine texture; well-carried	1
Eyes, large; full; mild; bright	2
Horns, small; tapering finely toward the tips; set moderately narrow at base; inclining forward; well-curved inward; not to be discounted if neatly dehorned	1
Neck, long; fine and clean at junction with the head; evenly and smoothly joined to shoulders	3
Shoulders, slightly lower than the hips; smooth and rounding over tops; moderately broad and full at sides	3
Crops, full; level with the shoulders	4
Chine, straight; strong; broadly developed, with open vertebrae	3
Loins and hips broad; level or nearly level between the hip bones; level and strong laterally; spreading from chine broadly and nearly level; hip bones fairly prominent	6
Rump, long; broad, with roomy pelvis; nearly level laterally; full above the thurls; carried out straight to tail head	6
Pin bones, wide between; nearly level with hips	2
Thurls, high; broad through	2
Tail head and tail, strong at base without coarseness; the setting well back; tail long, tapering finely to a full switch	2
Chest, deep; wide; well-filled and smooth in the brisket; broad between the forearms; full in the foreflanks	6
Barrel, long; deep; well rounded; strongly and trimly held up	9
Flanks, deep; full	2
Thighs, wide; deep; straight behind; wide and moderately full at the outsides; twist well cut out and filled with development of udder; escutcheon well-defined	2
Mammary veins, large, tortuous, entering large orifices or double extension; with additional developments, such as branches and connections entering numerous orifices	6
Udder, capacious; flexible; quarters even and of uniform texture, filling the space in the rear below the twist, extending well forward; broad and well-attached	20
Teats, well-formed; plumb; of convenient size; properly placed	4
Legs, medium length; clean; nearly straight; wide apart; firmly and squarely set under the body; arms wide, strong, and tapering	4
Hair and hide, hair healthy in appearance; fine and soft; hide of medium thickness; mellow and loose	6
Total	100

PRODUCTION

The Holsteins produce a large quantity of milk with a comparatively low butterfat content.

The 45,445 cows of all ages with yearly records in the Advanced Register completed up to January 1, 1941, produced an average per cow of 16,737.4 pounds of milk and 574.3 pounds of butterfat, with 3.43 percent of butterfat. During the same period there were also 17,323 10-month records completed with an average production of 13,986 pounds of milk and 477.0 pounds of butterfat or 3.41 percent of butterfat.

In the Herd-Improvement Register, up to October 1, 1940, 3,778 Holstein herds containing 83,715 cows had completed yearly records with an average of 11,208 pounds of milk and 385 pounds of butterfat or 3.44 percent of butterfat.

The 10 highest butterfat and the 10 highest milk producers among the Holsteins, up to January 1, 1941, are listed in table 14.

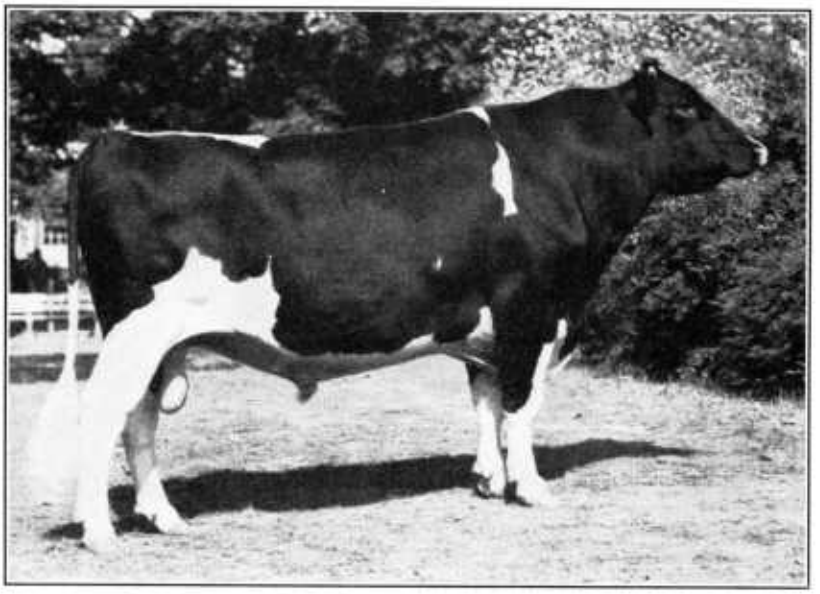

FIGURE 13.—Holstein bull, King Bessie Korndyke Ormsby 14th 667791. Grand Champion, National Dairy Show, 1940.

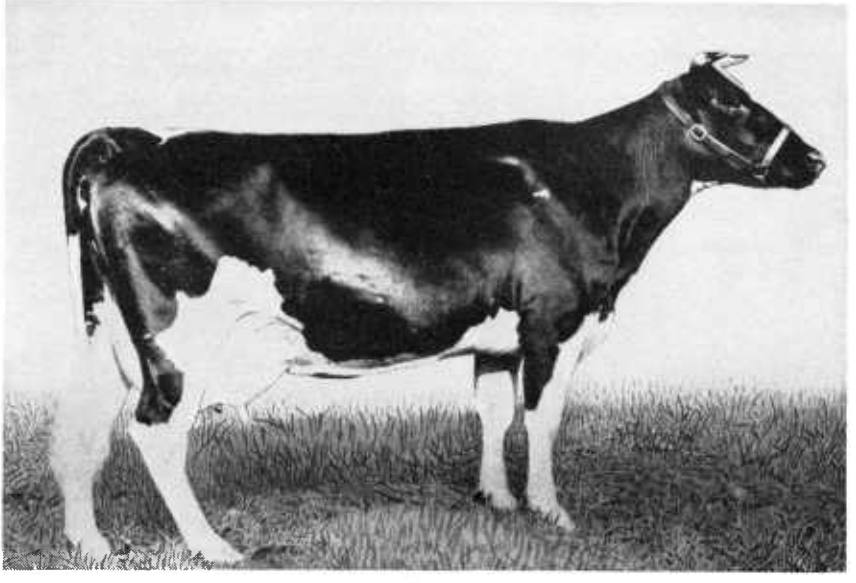

FIGURE 14.—Holstein cow, Montvic Bonheur Black Beauty 2147482. Grand Champion, National Dairy Show, 1940.

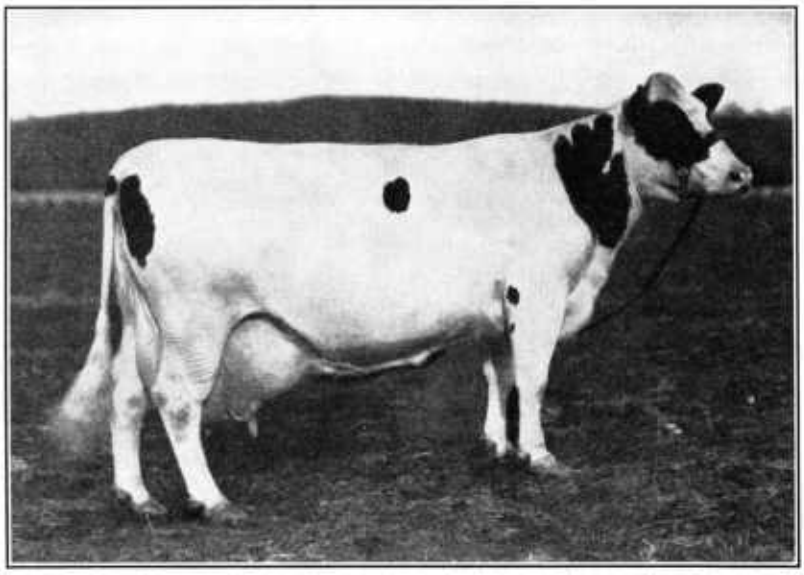

FIGURE 15.—Holstein cow, Carnation Ormsby Butter King 1165152. This cow held the highest yearly milk and butterfat record of all the breeds in the United States up to January 1, 1941.

TABLE 14.—*The 10 highest yearly butterfat and milk producers of the Holstein breed in the United States*

Cow	Butterfat	Cow	Milk
	Pounds		*Pound*
Carnation Ormsby Butter King 1165152	1,402.0	Carnation Ormsby Butter King 1165152	38,607
DeKol Plus Segis Dixie 295135[1]	1,349.3	Carnation Ormsby Madcap Fayne 1639621.	37,505
Carnation Ormsby Nellie 1326284	1,328.8	Segis Pietertje Prospect 221846	37,381
Calamity Nig of Elmwood Farms 1560447	1,327.9	Carnation Prospect Veeman 799610	36,859
Carnation Ormsby Madcap 1554602	1,313.0	Carnation Ormsby Madcap 1554602	36,851
Carnation Ormsby Madcap Fayne 1639621.	1,306.1	Helm Veeman Wooderest 486877	36,218
Carnation Ormsby Segis Beauty 1203395	1,290.4	Carnation Ormsby Nellie 1326284	35,887
Daisy Aaggie Ormsby 3d 571569	1,286.2	Lady Pride Pontiac Lieuwkje 849602	35,627
Carnation Prospect Ormsby Gluck 1042591.	1,225.4	Kolrain Marion Finderne 317396	35,340
Femco Johanna Bess Fayne 1073533	1,220.4	Aleartra Ormsby Canary 1135532	35,272

[1] Canadian cow.

BULLS

Table 15 lists 10 registered Holstein bulls that were proved in dairy herd-improvement associations and reported in the Bureau of Dairy Industry proved-sire lists, published by the United States Department of Agriculture between November 1, 1935, and January 1, 1941. For a bull to be considered for inclusion in this table, he must have met the following requirements:

(1) He must have had 10 or more unselected daughters with production records, whose dams also had production records.

(2) His daughters must have had an average 305-day butterfat production which exceeded that of the dams by 25 or more pounds.

Records of the daughters and of their dams were converted where necessary to a twice-a-day milking, 6-year-old basis, and if a cow had more than one record, the average of all her records was taken.

From the sires that met these conditions the 10 whose daughters average the highest in butterfat production were selected.

TABLE 15.—*Ten registered Holstein-Friesian sires proved in dairy herd-improvement associations*

Name of sire	Daughter-dam comparisons	Average butterfat production of daughters	Increase over dams
	Number	*Pounds*	*Pounds*
King Champion Jannek 18th 460879	17	598	128
Mohofar Colantha Ormsby 617203	11	547	102
Posch Ormsby Fobes 11th 701072	12	531	135
Montvic Rag Apple Netherland 695000	16	530	105
Octagon Korndyke DeKol 566341	13	519	185
Taylaker Astrea Ormsby Blossom Jim 668553	13	518	63
Korndyke Doxey Clothilde 455345	13	517	104
Great Home Bess Burke Pride 554771	27	515	100
Nittanyvale Aaggie Loyalsock 486534	39	514	44
Douglas Buttercup Hark 660575	15	514	94

JERSEY

ORIGIN AND HISTORY

The Jersey breed originated in the Island of Jersey, one of the group of Channel Islands, between England and France. In 1789 a law was passed prohibiting the importation of cattle into Jersey Island except for immediate slaughter. Shortly afterwards the cattle on that island became known by the name of Jersey instead of Alderney. No outside blood has been introduced since that time.

IMPORTATION AND DISTRIBUTION

The first importation of Jerseys into the United States was made in 1850. A few more were brought over about 20 years later, and from 1870 to 1890 there were numerous importations. Since 1890 many Jerseys have been imported every year.

The Jerseys are more evenly distributed in the United States than any other breed. Table 1 shows that, in 1932, there were in the United States 9,961,000 animals carrying more or less Jersey blood. According to table 2, in 1930 there were 354,939 registered Jerseys in the United States. It is estimated that on January 1, 1941, the number of registered Jerseys was 261,369.[8]

GENERAL CHARACTERISTICS

The Jersey (figs. 16, 17, and 18) is the smallest in size of the breeds discussed in this bulletin. The calves weigh from 40 to 75 pounds at birth. The heifers develop rapidly and mature sufficiently to drop the first calf at 24 months of age. The mature cows weigh from 900 to 1,100 pounds, averaging about 1,000 pounds, and the bulls weigh from 1,300 to 1,600, averaging about 1,450 pounds.

The color of Jerseys is usually some shade of fawn or cream color, though different shades of mouse color, gray, and brown are common

[8] See footnote 1, p. 9.

and some individuals approach black. They may be solid color of any of these shades, or spotted with white. The muzzles and tongues are usually black or lead-colored, but light-colored tongues are not uncommon, and around the muzzle is a white or mealy ring.

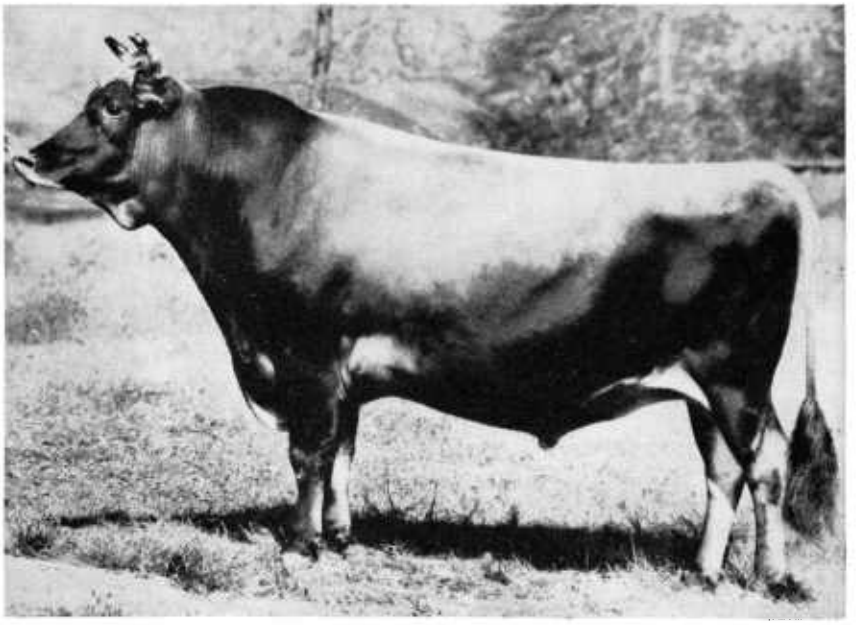

FIGURE 16.—Jersey bull, Misty Dawn's Successor 382743. Grand Champion, National Dairy Show, 1940.

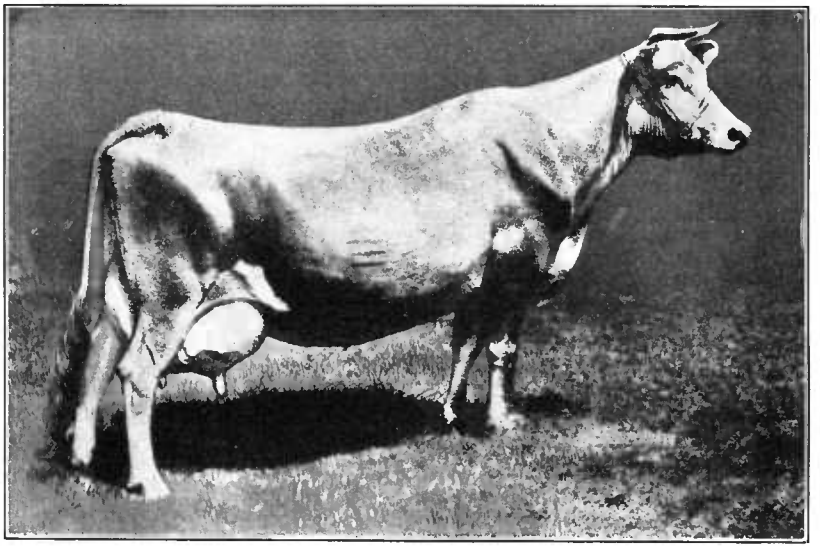

FIGURE 17.—Jersey cow, Abagail of Hillside 457241. Highest milk producer of the breed in the United States.

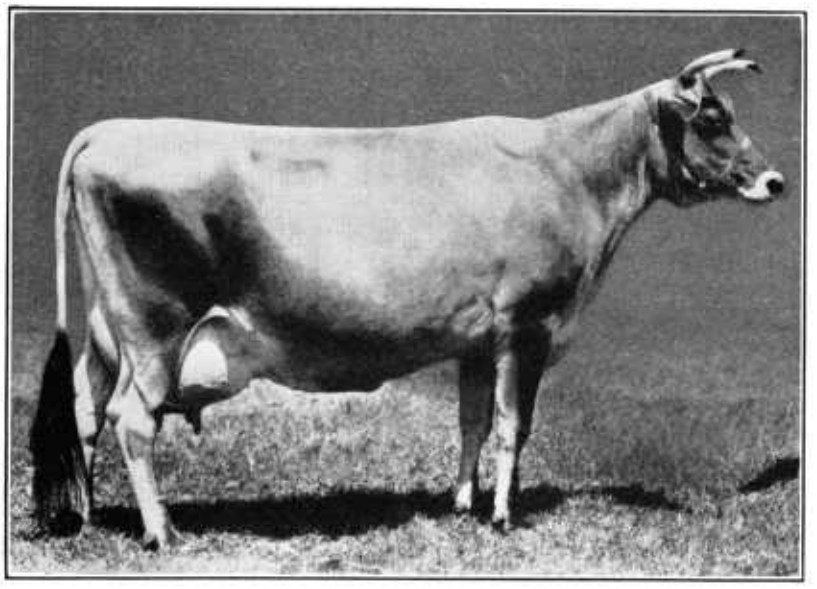

FIGURE 18.—Jersey cow, Stockwell's April Pogis of H. P. 694544. Highest butterfat producer of the breed in the United States.

SCALE OF POINTS FOR JERSEY COW

	Perfect score
Head	6
Medium size, lean; face dished; broad between eyes; horns medium size, incurving	3
Eyes full and placid; ears medium size, fine, carried alert; muzzle broad, with wide open nostrils and muscular lips, jaws strong	3
Neck	4
Thin, rather long, with clean throat, neatly joined to head and shoulders	4
Body	36
Shoulders light, good distance through from point to point, but thin at withers; chest deep and full between and just back of forelegs	5
Ribs amply sprung and wide apart, giving wedge shape with deep, large abdomen, firmly held up, with strong muscular development	10
Back straight and strong, with prominent spinal processes; loins broad and strong	5
Rump long to tail setting, and level from hip bones to pin bones	5
Hip bones, prominent and wide apart	3
Thighs flat and wide apart, giving ample room for udder	3
Legs proportionate to size and of fine quality, well apart, with good feet, not to weave or cross in walking, and not crooked	2
Hide loose and mellow	2
Tail thin, long, with good switch, not coarse at setting	1
Udder	24
Large, flexible and not fleshy	6
Broad, level, not deeply cut between teats	4
Fore udder full and well rounded, running well forward of front teats and firmly attached	7
Rear udder well rounded, well out and up behind, wide and firmly attached	7
Teats	8
Uniform, convenient length and size, regularly and squarely placed and to hang plumb	8

SCALE OF POINTS FOR JERSEY COW—Continued		Perfect score
Milk veins		4
Large, long, tortuous and elastic, entering large and numerous orifices	4	
Size		3
Mature cows, 900 to 1,100 pounds	3	
General appearance		15
A symmetrical balancing of all the parts, and a proportion of parts to each other with general indication of pronounced dairy temperament and with capacity for food and productiveness at pail	15	
Total		100

PRODUCTION

Jersey milk usually is yellow and high in percentage of butterfat. Up to January 1, 1941, 47,578 cows and heifers had completed 63,044 Register-of-Merit records in either the 305- or 365-day divisions. The average production per cow of this entire group was 8,584 pounds of milk and 460.2 pounds of butterfat, with an average test of 5.36 percent. Of these, 31,416 were 365-day records which averaged 9,127 pounds of milk and 490 pounds of butterfat.

In the Herd-Improvement Registry up to January 1, 1940, 43,978 records were made in 1,676 herds, and these records average 6,919 pounds of milk and 366 pounds of butterfat, with an average test of 5.29 percent.

The 10 highest butterfat and the 10 highest milk producers among the Jerseys, up to January 1, 1940, are listed in table 16.

TABLE 16.—*The 10 highest yearly butterfat and milk producers of the Jersey breed in the United States*

Cow	Butterfat	Cow	Milk
	Pounds		*Pounds*
Stockwell's April Pogis of H. P. 694544	1,218.5	Abagail of Hillside 457241	23,677
Abagail of Hillside 457241	1,197.5	Madeline of Hillside 389336	20,624
Darling's Jolly Lassie 435948	1,141.3	Fauvic's Star 313018	20,616
Dairylike Star Dolly 1099469	1,132.2	Golden Chief's Lady May 601637	[1] 19,922
Groff's Constance 367292	1,130.1	Fauvic Ruth 385463	19,805
Prince's Emma of H. S. F. 359390	1,110.0	Passport 219742	19,695
Mayflower's Pogis Surprise 705971	1,105.1	Red Lady 396118	19,608
California's Rinda's Insie 565559	1,073.4	Sybil's Miss May 477787	19,239
Imp. Cancalaise 696129	1,072.4	Lad's Likeness 338246	19,223
Sybil's Lucky June 959891	1,055.7	Eminent's Jimp's Owl 297471	19,099

[1] 305-day record.

BULLS

Table 17 lists 10 registered Jersey bulls that were proved in dairy herd-improvement associations and reported in the Bureau of Dairy Industry proved-sire lists, published by the United States Department of Agriculture between November 1, 1935, and January 1, 1941. For a bull to be considered for inclusion in this table, he must have met the following requirements:

(1) He must have had 10 or more unselected daughters with production records, whose dams also had production records.

(2) His daughters must have had an average 305-day butterfat production which exceeded that of the dams by 25 or more pounds.

Records of the daughters and of their dams were converted where necessary to a twice-a-day milking, 6-year-old basis, and if a cow had more than one record, the average of all her records was taken.

From the sires that met these conditions, the 10 whose daughters average the highest in butterfat production were selected.

TABLE 17.—*Ten registered Jersey sires proved in dairy herd-improvement associations*

Name of sire	Daughter-dam comparisons	Average butterfat production of daughters	Increase over dams
	Number	*Pounds*	*Pounds*
Gapon's Countess' Lad 159969	19	496	36
Josephine's Royal King 250214	23	484	57
Vixen's Oxford Beau 131638	10	473	82
Illini Flora's Emperor 258164	16	467	39
S's T's Floss' Duke 216516	14	466	31
Sophie 19th's Victor 13th 207415	16	465	89
Fauvic Owl General 353304	10	464	40
Mary Pogis of Andrewsia 308442	28	460	46
Spermfield Owl's Veteran 329412	17	455	80
Gold Ring's Oxford Lad 293667	13	455	115

THE AMERICAN DAIRY CATTLE CLUB

The American Dairy Cattle Club was organized under the laws of the State of Illinois and filed its certificate of organization November 14, 1936. According to its bylaws this club was formed to improve the dairy cattle of the United States, regardless of color or previous breeding, through the practice of continuously testing the production of females and proving bulls, in the herds of both members and nonmembers under rules established by the board of directors.

TABLE 18.—*Requirements for recording cows and bulls in American Dairy Cattle Club Record*

Order	Pedigree requirements for recording cow or bull	
First Order	No pedigree requirement.	
Second Order	Parents must be recorded in at least the First Order.[1]	
Third Order	Parents must be recorded in at least the Second Order.[2]	
Fourth Order	Parents must be recorded in at least the Third Order.	
Order	Performance requirements for recording—	
	Cows (record of butterfat production)	Bulls (proved-sire index of butterfat production)
	Pounds	*Pounds*
First Order	(Must have a complete lactation record, no quantity requirement.)[3]	375
Second Order	350	400
Third Order	375	425
Fourth Order	400	450

[1] The pedigree requirement for recording a bull in the Second Order is waived in the case of any dairy bull with a 10-pair index of 450 pounds butterfat.

[2] The pedigree requirement for recording a bull in the Third Order is waived in the case of any bull with a 15-pair index of 500 pounds of butterfat.

[3] The performance requirement for recording a cow in the First Order is waived in the case of any cow with two daughters each having a record of at least 300 pounds of butterfat.

The recording system consists of four orders. Each order represents a generation, starting with the First (or lowest) and progressing to the Fourth (or highest) Order. No ancestry or pedigree record is required for the First Order, but for recording in all higher orders, with few exceptions, there is a pedigree as well as a performance requirement. All performance requirements for females are based on a twice-a-day milking, 305-day record, calculated to maturity, and for bulls on an equal parent index of milk production and percentage of butterfat from at least five dam-and-daughter pairs, based on such records. The requirements for recording are given in table 18.

No animals had been recorded in the Fourth Order up to January 1, 1941.

BREED ASSOCIATIONS

The various national breed associations and clubs maintain offices and forces whose duty it is (1) to keep the herdbooks for their respective breeds; (2) to keep a record of the animals that have qualified for the additional registration because of meritorious performance; and (3) to further the interest of the breed in other ways. The official names of these organizations, the names of their respective secretaries, and their addresses are as follows:

Ayrshire Breeders' Association of the United States of America, C. T. Conklin, secretary, Brandon, Vt.

Brown Swiss Cattle Breeders' Association of America, Ira Inman, secretary, Beloit, Wis.

Dutch Belted Cattle Association of America, R. E. Schwartz, secretary, Buchanan, Mich.

The American Dairy Cattle Club, Clifford L. Clevenger, secretary, 11 South LaSalle Street, Chicago, Ill.

The American Guernsey Cattle Club, Karl B. Musser, secretary, Peterborough, N. H.

The American Jersey Cattle Club, L. W. Morley, secretary, 324 West Twenty-third Street, New York, N. Y.

The Holstein-Friesian Association of America, H. W. Norton, Jr., secretary, Brattleboro, Vt.

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